NEWSBULLETIN

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CSIR-NATIONAL BOTANICAL RESEARCH INSTITUTE, LUCKNOW

The Environmental Information System at Eco-Auditing Laboratory, National Botanical Research Institute is focussed on "Plants & Pollution". This is the E-mail Publication that Feature News, Information and Events Related to Plants & Pollution.

The Focus of ENVIS has been on Providing Environmental Information to Decision Makers, Policy Planners, Scientists and Engineers, Research Workers, etc. all over the World.

Eco-Auditing Group is Involved in R & D on Eco-Monitoring, Environmental Impact Assessment, Eco-Friendly Models that are Technologically and Economically Feasible for Phytoremedia--tion of Polluted Lands and Polluted Waters etc.

News

How the Chicxulub impactor gave rise to modern rainforests

Tropical rainforests today are biodiversity hotspots and play an important role in the world's climate systems. A new study published today in Science sheds light on the origins of modern rainforests and may help scientists understand how rainforests will respond to a rapidly changing climate in the future. The study led by researchers at the Smithsonian Tropical Research Institute (STRI) shows that the asteroid impact that ended the reign of dinosaurs 66 million years ago also caused 45% of plants in what is now Colombia to go extinct, and it made way for the reign of flowering plants in modern tropical rainforests. "We wondered how tropical rainforests changed after a drastic ecological perturbation such as the Chicxulub impact, so we looked for tropical plant fossils," said Mónica Carvalho, first author and joint postdoctoral fellow at STRI and at the Universidad del Rosario in Colombia. **…..Read more...**

Date: April 02, 2021
Source: Science Daily

Researchers validate new technique for rapidly diagnosing herbicide-resistant weeds

As the number of weed populations resistant to multiple herbicides continues to soar, it is clear that better tools are needed to help growers rapidly diagnose resistance issues. With more timely access to information, they can take earlier, proactive steps to keep resistant weeds from spreading. A recent article in the journal Weed Science describes a new rapid "leaf-disk assay" that uses chlorophyll fluorescence emissions to determine whether a weed is resistant to various systemic and contact herbicides. In contrast to time-consuming and labor-intensive greenhouse screenings and population studies, leaf-disk assay results are available in about 48 hours. **.....Read more...**

Date: April 07, 2021
Source: phys.org

New biosensor makes control hormone auxin visible in cells

The effects of the plant hormone auxin were first described scientifically almost 100 years ago. Today we know that auxin controls countless processes in plant cells -- be it in the development of the embryo in the seed, the formation of the root system, or the orientation of growth to incident sunlight. In all cases, the hormone has the function of coordinating the plant's responses to external stimuli. To do this, it must always be present in the cell tissue where the response to an external stimulus needs to be triggered. Indeed, it is often the case that auxin is needed at very different places in the cell tissue within a very short space of time. This leads to rapid spatial redistribution. With the new biosensor, called AuxSen for short, the dynamics of these processes can be observed in real time for the first time. Light signals indicate where the auxin is located in the cell tissue. **…...Read more...**

Date: April 07, 2021
Source: Science Daily

Bacteria help plants grow better

That is at least the conclusion of the current study. The participating researchers studied several maize varieties that differ significantly in their yield. In their search for the cause, they came across an enzyme, flavone synthase 2. "The high-yield inbred line 787 we studied contains large amounts of this enzyme in its roots," explains Dr. Peng Yu of the Institute of Crop Science and Resource Conservation (INRES) at the University of Bonn. "It uses this enzyme to make certain molecules from the flavonoid group and releases them into the soil." Flavonoids give flowers and fruits their color. In the soil, however, they perform a different function: They ensure that very specific bacteria accumulate around the roots. And these microbes, in turn, cause the formation of more lateral branches on these roots, called lateral roots. "This allows the maize plant to absorb more nitrogen from the environment," **…...Read more...**

Date: April 08, 2021
Source: Science Daily

Breakthrough in plant protection: RNAi pesticides affect only one pest species

The harmfulness of pesticides to beneficial organisms is one of the most serious concerns in agriculture. Therefore scientists are eagerly looking for new, more environmentally friendly and species-specific solutions. Researchers at the Estonian University of Life Sciences, Ghent and the University of Maastricht took a long step forward in this regard. The detrimental impact of pesticides on non-target organisms is one of the most urgent concerns in current agriculture. Double-stranded RNAs (dsRNAs) represent the most species-specific class of pesticides to date, potentially allowing control of a target pest without effecting other species. The unprecedented target-specificity of dsRNA is due to its nucleotide sequence-specific mode of action that results in post-transcriptional gene silencing, or RNA interference (RNAi), in the target species. The development and field use of dsRNAs, **…...Read more...**

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Source: phys.org

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